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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/828,781

04/21/2004

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EXAMINER

MARX, IRENE

ART UNIT

PAPER NUMBER

1651

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/828,781	<b>Applicant(s)</b> FENNELL ET AL.	
	<b>Examiner</b> Irene Marx	<b>Art Unit</b> 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

The amendment filed 7/24/08 is acknowledged. Claims 1-7 are being considered on the merits.

The confusion regarding the rejection under 35 U.S.C § 112, second paragraph is regretted. Any possible rejection has been obviated by applicant's amendment.

Applicant presented the Seshadri *et al.* article and the Hendrickson WO document in an attempt to show public availability of strain *Dehalococcoides ethenogenes* 195. These documents were considered only to the extent that they pertain to the deposit issue. These documents will not be listed on any patent that matures from this application in the absence of a proper Information Disclosure Statement.

From the complete sequence available at  
<http://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&val=CP000027.1>  
one of ordinary skill in the art would be able to obtain the strain *Dehalococcoides ethenogenes* 195 reproducibly.

Therefore, the deposit requirement is withdrawn.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 are/remained rejected under 35 U.S.C. 103(a) as being unpatentable over Adrian *et al.* taken with Maymo-Gatell *et al.* in light of Bunge *et al.*.

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Adrian *et al.* teach a process of dehalogenation of aromatic chlorinated compounds with a strain of *Dehalococcoides*. See, e.g., Col. 2, paragraph 1. It is noted that Adrian *et al.* uses a mixed culture and provides an electron donor, such as hydrogen (page 581, paragraph 1.)

The references differ from the claimed invention in that the strain cultured does not appear to be strain *Dehalococcoides ethenogenes* 195. However, the strain cultured is very closely related to this strain as shown in Fig. 2 of Adrian *et al.*

Moreover, Bunge *et al.* adequately demonstrates that the strain taught therein has 16S ribosomal DNA having 98.5% identity with strain 195 (See, e.g., page 358, paragraph 2).

Strain 195 is known in the art to be capable of the dehalogenation of aliphatic compounds, such as tetrachloroethene, as adequately demonstrated by Maymo-Gatell *et al.* and uses hydrogen, butyrate or methanol as electron donors (page 1569, paragraph 2). One of ordinary skill in the art would have been motivated to add a simple halogenated compound to the bioconversion medium of strain 195, given that this strain, for example, was known to grow well on tetrachloroethene and hydrogen at the time the claimed invention was made. See, e.g., Maymo-Gatell *et al.*, page 1570, col. 2, paragraph 2).

One of ordinary skill in the art would have had a reasonable expectation of success in process of dehalogenating aromatic compounds with strain *Dehalococcoides ethenogenes* 195 in view of the teachings of Adrian *et al.*, in light of Bunge *et al.*, of a very closely related strain that is capable of this bioconversion.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the process of Adrian *et al.* by replacing strain *Dehalococcoides* CBDB1 with strain *Dehalococcoides ethenogenes* 195 in view of their close relatedness and the teachings of Maymo-Gatell *et al.* regarding the dehalogenating properties of strain 195 for the expected benefit of providing an effective process of bioremediation for very toxic and health-damaging environmental pollutants, such as dioxins.

Thus, the claimed invention as a whole was clearly *prima facie* obvious, especially in the absence of evidence to the contrary.

### **Response to Arguments**

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

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Applicant argues that there would have been no motivation to add a toxic compound such as tetrachloroethene to the contaminated material. This argument is puzzling because this is precisely the same compound used in the instant specification, i.e., tetrachloroethylene (PCE). See, e.g., paragraph [0006]. Perchloroethylene is also known as PCE, tetrachloroethylene, tetrachloroethene, Perc, Percelene, and Perchlor. (See, e.g. <http://tosc.oregonstate.edu/workingwith/pce8-17-01.pdf>).

Moreover, one of ordinary skill in the art would have reasonably expected some decontamination of the added compound upon use of the compound by the microorganism.

Applicant argues that the references failed to appreciate the introduction of a "simple halogenated compound" to enhance the bioremediation process of the contaminant. However, the use of such compound is disclosed by Maymo-Gatell *et al.*. It is also noted that there is no clear definition on the record of what constitutes "simple halogenated compound" in this context or the amount required to achieve the desired effect. At [0040] applicant states "As used herein, a simple halogenated compound *can include* any C1, C2, C3 or C4 hydrocarbon substituted with a chloro-, bromo-, fluoro-, or iodo-group" (emphasis added) and provides a list of non-exclusive examples. Moreover, the argued limitation is found in dependent claim 4 and in claims 5-7, but not in claims 1-3, for example. It is also emphasized that it is unclear that addition or introduction of any simple halogenated aromatic compound in any amount whatsoever will have the touted enhancing effect.

The scope of the showing must be commensurate with the scope of claims to consider evidence probative of unexpected results, for example. In re Dill, 202 USPQ 805 (CCPA, 1979), In re Lindner 173 USPQ 356 (CCPA 1972), In re Hyson, 172 USPQ 399 (CCPA 1972), In re Boesch, 205 USPQ 215, (CCPA 1980), In re Grasselli, 218 USPQ 769 (Fed. Cir. 1983), In re Clemens, 206 USPQ 289 (CCPA 1980). It should be clear that the probative value of the data is not commensurate in scope with the degree of protection sought by the claim.

Therefore the rejection is deemed proper and it is adhered to.

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 .

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Irene Marx/  
Primary Examiner  
Art Unit 1651